No battle as Lockheed takes Titan

Lockheed Martin Corp and Titan Corp are agreed to Lockheed Martin acquiring Titan.

The value of the transaction, including the assumption of about $580m of Titan debt, is approximately $2.4bn, before accumulated tax benefits.

Lockheed Martin expects the proposed acquisition to be immediately accretive to its earnings and to will fund the cash portion of the merger consideration using existing cash and short-term investments. The transaction is expected to close in the first quarter 2004.

San Diego-based Titan Corporation provides command, control, communications, computers, intelligence, surveillance and reconnaissance (C4ISR), enterprise IT and homeland security products and services, with over 11,000 employees in 41 states and 12 countries. Nearly all sales are to the US government.

For the first six months of this year, Titan reported sales of $815m an increase of 24% compared to first half of 2002.

"Titan provides additional presence within the US government customer base and expands our competencies.

"Titan is an excellent fit with Lockheed Martin, and its acquisition is consistent with our disciplined growth and cash deployment strategies," said Vance Coffman, Lockheed Martin chair and CEO.

Web:www.lockheedmartin.com

MEMS-based adaptive optics phoropter

The Adaptive Optics Phoropter is a system that uses MEMS-based deformable mirror technology to correct wavefront aberrations in the eye. It combines technologies from astronomy and micromachining to advance the study and treatment of retinal diseases. Applications for the tool include generation of improved prescriptions for custom contact lenses or laser eye surgery, as well as high-resolution retinal imaging. The award is shared by LLNL, which led the project, Sandia Labs, University of Rochester, Wavefront Sciences, Boston Micromachines Corp, and Bausch & Lomb.

Sandia researchers Steve Eisenbies and Steve Haney contributed to the opto-mechanical design and integration of a compact, transportable adaptive optics system that improves upon traditional devices currently used in optometrists' offices. In addition to determining correction needed for near-sightedness or far-sightedness and astigmatism, it also determines corrections needed for high-order aberrations, that can interfere with night vision and can provide a preview of that correction to a patient.
The effects of aberrations can be compared to distortions seen in a pool due to ripples on the surface. Diminished night vision or a perception of "halos" can sometimes result from aberrations introduced during laser eye surgery.

NIST funding magnetic regenerator refrigerator

Sponsored by Astronautics Corporation of America, the magnetic regenerator fridge project duration is until 2006 costing a total of $4,3m of which ATP will provide $1,7m.

Current refrigeration systems use old fashioned vapour compression. Only marginal improvements in efficiency are possible for this mature technology. Astronautics Corporation of America will focus on magnetic refrigeration-based appliances which run more quietly and weigh less than current refrigeration systems. The technology could be used in a wide variety of products with cooling loads ranging from10 to 5,000W including dehumidifiers and air conditioners.

Key feature of this technology will be a high-performance active magnetic regenerator (AMR) matrix made of advanced magnetocaloric materials (MCMs), such as gadolinium metal and gadolinium alloys.

The aim of this three-year project is to validate this rotary design incorporating an advanced AMR matrix for a magnetic refrigerator. Developing a high-performance matrix is the primary risk. This task requires finding suitable materials; fabricating these materials into a suitable geometry and joining the materials; and laminating the plates into a strong, monolithic matrix that has minimal volume and allows optimal fluid flow with low pumping power.

Ceramatec will be subcontracted to develop fabrication methods for constructing AMRs from brittle materials, and Ames Lab (Ames, IA) will be subcontracted to characterise magnetocaloric materials. Astronautics cannot invest at the rate needed to bring this technology rapidly to market. Current refrigeration systems account for 25% of residential electricity usage and over 15 % of commercial electric demand. When fully commercialised, magnetic refrigeration could reduce residential energy usage by $5bn annually.

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Qualcomm beyond the billion

Qualcomm Inc, a pioneer of Code Division Multiple Access digital wireless technology, has announced that the company has shipped 1bn chips since its first commercial CDMA solution was provided to wireless handset customers and infrastructure providers in 1994. During the past nine years, Qualcomm's chipsets have been instrumental in helping to drive CDMA to be the most dynamic technology in the wireless industry, and helped make the company the largest provider of third-generation (3G) technology today.

Partner and chipset solution supplier to the largest base of wireless device manufacturers worldwide, Qualcomm has enabled the design and development of a great majority of the more than 330 commercial CDMA2000(R) 1X and WCDMA (UMTS) wireless devices available at present.

Devices include 3G multimedia and gaming terminals; still-image and video phones; high-accuracy position location phones and dedicated tracking devices, smart phones and wireless PDAs; and low-cost voice phones that allow carriers to provide basic voice service, leveraging the superior network capacity provided by CDMA-based standards such as WCDMA (UMTS) and CDMA 2000 1X.